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From the American Agriculturist.

NECESSITY OF A KNOWLEDGE OF CHEMICAL PRINCIPLES TO A FARMER.

It will be my object, in the few brief remarks I intend to make in this paper, to illustrate, by some familiar examples, the absolute necessity of a knowledge of the principles of chemistry, to every one who expects to carry on the operations of the farm, or even domestic affairs successfully.

Heat is one of the great agents of nature in effecting her changes, and modifying her results. What heat is, whether matter, or some effect or result of matter, is yet unknown. Great heat is always attended with light, and it is probable that, in all its degrees, it is inseparable from electricity, and perhaps is identical with it. But it is my present object simply to show, by some practicable examples of every day occurrence, some of the laws by which it acts.

Heat expands, with some slight exceptions, all the objects into which it enters. Thus, a cold hand is shrivelled; but warmed, it is more plump and full. Every one knows that a boot or shoe that is too tight for summer use, can be comfortably worn in the cold of winter. An ordinary metallic pendulum that keeps correct time in summer, by its contraction, will beat too quick, and consequently produce fast time in winter. An iron bolt, when fastened while hot, will contract on becoming cold, and close up a seam, which the power of man, with the lever and screw, could not effect. The blacksmith sets his iron on the wagon wheels while red hot, and immediately cooling it, he sinks it sometimes half an inch on every side in the wood. The common thermometer is another illustration of this principle.

Fluids partake largely of this expansibility by heat. But its effects are more strikingly illustrated in air or gases, than in any other substances. The particles of matter of which these are composed, are more easily separated and kept asunder, and they feel the influence of heat in a wonderful degree. A cubic inch of water when converted into steam occupies 1700 times its original space, even when nearly of the same temperature. The principle on which all steam engines are propelled, is solely that of the expansive power of water and vapor by the application of heat. Thus, the heat yielded by a handful of wood, passing through a half-inch iron boiler into water, and then expanded into steam, will produce an effect that the combined strength of 100 horses could not accomplish. Heat produces nearly all the changes of weather, by the rarefaction (or expansion) of the air, and the consequent currents of that fluid which necessarily follow; for as the heated air becomes necessarily lighter by expansion, and rises, heavier air rushes in, frequently from an immense distance, to supply its place, and hence storms and sometimes hurricanes, whose violence is proportionate to their cause; and so if the air suddenly loses its heat, the neighboring warmer air hurries to supply the partial vacuum.

Heat (another form of electricity perhaps, or in all cases associated with it,) is also the great agent of vegetable life, giving direction and effect to the moisture and other elements of vegetables, when the embryo plumules and cotyledons burst from the germ; nor is its vivifying influence withheld for a moment from the growing plant, till the entire work of reproduction is accomplished, and the seed is fully matured which is to perpetuate other generations through the whole course of time.

The most striking exceptions to the expansive effects of heat, are in clay, and water below a certain temperature. The former contacts through the highest known temperature that can be given to it; and a thermometer for furnaces, called, from the name of its inventor, Wedgwood, has been constructed from this material, which is not injured by the most intense heat known. Water continues to contract till it reaches a temperature of 39 deg. Fahrenheit, when by a merciful exception to the general law, it begins to expand, and continues till it reaches 32 deg., the freezing point, when it congeals. This keeps the cold water on the surface till it freezes, and this change of the liquid into a solid still farther diminishes the density, thus keeping the whole body of water in lakes and rivers beneath, in a condition to minister both support to its inhabitants, and the wants of man, and allow the surplus water to pass off towards the ocean.

The admission and retention of heat in bodies, is much affected by their substance and surface. A dense body will receive and retain more heat than such as are light and porous. A rough surface imbibes heat much quicker than a smooth one, when exposed to the rays of the sun or a fire; and when at a higher temperature than the surrounding atmosphere, parts with its surplus heat more readily than such as are smooth. The color of bodies has much to do with receiving and repelling heat, and retaining or parting with it. A black surface, when exposed to a high temperature, soon becomes hot, while such as are white, require a much longer time, under similar exposure, to reach the same temperature. Many substances of nearly equal density *conduct* heat with much greater facility than others. Let us consider, for a moment, some beautiful examples of the application of these laws.

Animals and birds inhabiting the arctic regions, where the cold is intense, are not only covered with thick fur and down, both of which are the best known conductors of heat; but on the approach of winter most of these change to a white color, which of all others is the worst conductor. During a great portion of an arctic winter, there is absolutely no sun, and for the remaining portion but a mere glimmering of his rays. All the warmth of living things in that region, therefore, is generated within the covering of fur or feathers, by the combination of the carbon of the blood derived from their food, and the oxygen of the air inhaled into the lungs, and all of which heat is most economically husbanded for the comfort and preservation of the living being.

The warm-blooded animals that live in the Arctic ocean, whales, porpoises, seals, walruses, &c., are not less protected than those on land, though in a different manner. Fur or feathers, if constantly immersed in water, would, after a time, admit it next the body, when a rapid lowering of its temperature would take place. Almighty wisdom has guarded the animals which live in that element in a manner totally different, yet equally effectual with such as live in the air. They have a smooth, naked skin, or sometimes covered with a thin hair, which is no impediment to their rapid passage through the water; and underneath is a thick covering of *fat*, which, though vastly denser than fur or feathers, is nearly equal in its non-conducting properties. So, too, in our own climate, the hog, which is the only animal not sufficiently protected against the rigors of winter by an external covering, takes care to supply this deficiency effectually, if allowed to indulge his gormandizing propensities, by loading the exterior of his carcass, immediately under his skin, with a thick coating of fat.

The temperature of the human being has to be provided for, through the extremes of winter and summer, by external clothing, though in extreme hot weather, a portion of this excessive heat is carried off by perspiration, which involves another beautiful principle of chemistry, that we have not time at present to illustrate. *Black* is the warmest clothing when exposed to the sun's rays, and the coolest when deprived of them; *white* is directly the reverse. Consequently, there is no more unsuitable color for clothing, where temperature alone is regarded, either for winter or summer, than *black*, and none more proper than *white*. The effect of black is somewhat obviated by using white linen and under cloths.

Black soils are more productive than such as are light colored, when in other respects they are equally charged with the elements of vegetable nutrition. They rapidly absorb heat when exposed to the rays of the sun, and as rapidly cool when they are withdrawn. Both of these effects are highly beneficial to vegetation. The heat which the soil acquires during the day, stimulates the action of the roots and growth of the plants; and the rapid cooling of the surface causes the dew with which the air is charged to be deposited early, and in large quantities, during the evening. Some gardeners use white sand on the top of the soils, "because," as they say, "it is so heating." Had they a knowledge of some of the first principles of chemistry, they would at once see the absurdity of the practice. Were the sand black, or of a dark color, the practice would be commendable, as it would *conduct the rays to the roots of the plants*, which its white color *reflects*. The sand is highly useful when *mixed* with many soils, but is objectionable when placed on the surface. Pure sand is frequently hotter than dark earth in similar situations; but it is because it is *drier* and a non-conductor, and retains what heat is imparted to it, while the evaporation of the moisture, and the *heat-conducting* properties of the dark soils, carry off the heat. A pure white or very light colored earth can never be fertile. Very luxuriant vegetables are always dark colored when growing, and their color helps their growth in two ways—and for the same reason that dark soils do, viz: by conducting the heat into the

plant while the sun is up, and again conducting it off when down, by which there is a rapid and plentiful deposit of dew upon it.

White buildings reflect the sun's rays, while darker colors absorb them; consequently, those which are white are vastly more durable than such as are very dark. It would be more economical to use white for all buildings, fences, tools, &c., used about a farm; even carts and sleighs and carriages would last much longer by substituting drab or light colors, for the black or dark brown usually adopted. When black is used for carriages, its bad effects are in a considerable degree prevented by the use of varnish, thus leaving a smooth polished surface, which reflects much of the heat. When not exposed to the direct rays of the sun, of course, there is no difference between this and other colors. The philosophy of placing plants that require much heat on the south side of white walls, is obvious. They reflect the rays of the sun upon the plants and soil covering the roots, thus affording them a double supply of heat. The white exterior of the wall arrests and sends back the rays that fall upon it, precisely as the amalgam, or quicksilver, on the back of a looking-glass arrests and sends back those which would otherwise be transmitted through it. A kettle or pot covered with soot, has the greatest advantage for absorbing heat, and when exposed to a fire, it will raise a liquid contained in it to the boiling point in half the time that a bright polished surface would, if similarly exposed; and it will cool, when withdrawn from the fire, in equally less time. The blackened tea-kettle is, therefore, the proper vessel to heat the water, and the white porcelain, or highly burnished metallic tea-pot, the proper one to maintain it hot for the longest time. R. L. A.

Buffalo, Feb., 1845.

TWELFTH AGRICULTURAL MEETING AT THE STATE HOUSE.

At this meeting, the subject discussed was the "management of sheep, swine, and horses." Mr Calhoun in the chair.

Mr Buckminster thought farmers were ambitious of making their stock too large. He prefers a small or middle sized horse to a large one.—They are better formed. Large horses are more apt to stumble, and become lame, and generally cannot perform so much work in proportion to the quantity of food which they eat. He could not see the advantage of raising hogs which would weigh 6 hundred pounds, but preferred one weighing about 4 hundred, with small bones. So also with sheep.

Mr Morton, of Hadley, usually keeps from one to two hundred sheep. They are of the Spanish Merino variety, having fine wool. This variety he thought the most profitable. Sheep should be short-legged, thick set, and well wooled under the belly. He thought two sheep weighing one hundred each, as profitable as one weighing two hundred. On grain land which has been worn down, sheep are the most profitable stock which can be kept. Thirty sheep could be kept on a worn-out field, where two cows would fare slim. They will subdue briars, Johnswort, and other noxious weeds. Mr Morton described his method of managing sheep. He has hovels for them to lay under, in the centre of his field—one to every fifty sheep.—They are very fond of laying in the shade, in summer, during the greater part of the day. He thought the manure saved in and about the hovels, compensated him for the expense of building.—These hovels should be built in spring, before the sheep are turned out, as, if they get in the habit of laying in the shade of a fence, or tree, it is difficult to make them change, and thus their manure is scattered about. A little hay or salt might be put in the hovels at first, to attract them. He thought sheep would do as well without water as with.—Indeed, he had had sheep fat quicker in a pasture without water. The only way he could account for this was, that they would feed all night, while the dew is on the grass, instead of sleeping. He had sheared on an average three pounds and three ounces of wool to each sheep. Farmers are too apt to sell the best lambs to the butchers.

As to hogs, he agreed with Mr Buckminster, that large ones were not the best. So also with horses. He thought the best feed for shoats was a mixture of corn and rye, or corn and buckwheat. It was a bad practice to keep pigs short until a certain time before killing, and then fatting them. They should be always fat. Their pens should be dry and warm.

Mr Morton thought that in rearing sheep, and other stock, farmers were too apt to breed in and in, or, in other words, breed altogether from one family, without crossing. Great advantages have been derived from imported sheep, by mixing the breeds. Sheep will do best of any stock upon meadow or poor hay, and will make as much manure as any. They should be properly bedded and housed in winter. In answer to an inquiry, Mr Morton stated that he feeds his hogs three times a day.

Mr Buckminster stated, in answer to an inquiry, that the Mackay hogs were a very fine breed.—They have small heads and very small bones, and are well-formed. It is said there are few, if any, of the true breed in existence. The gentleman from whom they derived their name, was a number of years in perfecting the breed, by crossing, picking out the finest, &c. A great stir has been made about the Berkshire hogs, but farmers in this vicinity do not think very highly of the breed.

Mr Cole stated that there were some hogs in Cambridge which are said to be of the pure Mackay breed. At any rate, their form, &c., is as good as any in the country. He thought that in some parts of the country, apples were as cheap as any food for swine, and when mixed with meal, bran, or pumkins, the sheep will grow well and fatten upon it. The apples should be boiled. He had found that hogs preferred apples which had been frozen, and then thawed. Mr Cole inquired whether hogs would not require more food when they worked in the manure heap, than when shut up in the pen; and also whether the pork is as good when they are suffered to wallow in filth, as when confined in a clean pen.

Mr Morton thought shoats would do better where they could get ground to root, than shut up. Many keep hogs near a horse stable, and throw in a little loam with the manure which is thrown out. The hogs will work it over, and prevent the manure burning up. He did not think this practise injured the flesh.

Mr Clark, of Sherburne, keeps his hogs at work, and thinks they do as well. One of his neighbors gives his hogs boiled apples and potatoes, with great success.

Mr Buckminster thought it well in some cases to turn hogs into the orchard. They will destroy the worms around the roots of trees, and eat the small apples which fall. They also enrich the soil.

Mr Magoun, of Pembroke, had tried apples and potatoes for hogs, and thought the mixture equal to potatoes alone. He had also given sweet apples. He is very particular in selecting a shoat, taking care that it has small bones, and is snug built, &c. He considered sheep as profitable as any stock that could be kept, where there is a suitable pasture.

Mr Glazier, of Ashburnham, had a good opinion of apples for horses. He thought them worth as much as oats. Hogs will do well upon apples, but he was inclined to think it more profitable to feed them to horses. In choosing a horse he preferred one with short legs and body. He had observed that a horse which masticated grain so that none could be discovered in the manure, would generally work well. He makes his horse work at night by giving him plenty of litter to trample upon. He also makes his hogs work in making manure.

Mr Magoun said that he considered apples very good to fatten horses, but they would not do so well for working horses. They would require grain.

Mr Cole thought that if hogs worked, they would want something more substantial than apples.—Many have doubts whether it is not better to shovel over their manure, and let their hogs lie still. Mr Cole thought they would require more food when they worked. In rearing horses, he thought it much better to train a horse from a colt, so as not to be under the necessity of breaking him. For instance a colt might be hitched up when young, when the mare went out for a short distance, instead of being allowed to follow her. He would soon become accustomed to the halter. He thought there was no danger of injuring a colt by using him when young. He had drawn as much wood with calves, in proportion to their weight, as oxen would draw, and that too, without hurting them in the least. Colts might be accustomed to labor without any more danger.

Mr Leonard, of Marshfield, had a poor opinion of large hogs. He prefers two hogs weighing three hundred pounds each, to one weighing six hundred. The meat is much finer. He thought sweet apples boiled and mashed, and mixed with meal, excellent for hogs. Boiled pumpkins might be substituted for the meal, for a change. He thought the profit of sheep depended upon the pasture. They are much more profitable in a poor pasture than cows, as they would get a much better living.—But if the pasture is good, cattle are the most profitable.

Mr Calhoun, the President of the meeting, said that he had been requested by an association in New York to call the attention of this meeting to the Alpacca sheep, efforts for introducing which were being made in that State. It is thought that they are well adapted to our climate. They are natives of the mountains of South America. Their size is large,—larger than any other variety. Their wool is from eight to twelve inches long, and of the very finest quality. They are very kind and docile—will stand all kinds of weather, and are subject to few diseases. The Alpaccas have been introduced with great success in England, on the mountainous parts of Scotland, and found to do well upon browse, and coarse meadow hay. An association has been formed in New York, and a considerable sum of money raised to introduce this variety into this country.

Mr Buckminster said that he considered sheep great eaters, and consequently not profitable.—

He thought that five would eat as much as one cow.

Mr Morton differed from Mr Buckminster. He would as soon winter one hundred sheep as ten cows. The sheep would feed later in the fall, and earlier in the spring, than cows.

Mr Buckminster thought that fields thus cropped by sheep during the cold season, would not produce so much grass the next summer. If the sheep are shut up, five would eat as much as a cow.

Mr Morton replied that he should think that eight sheep of the small kind, when shut up, would not eat more than a cow.

Mr Leonard allowed seven sheep to one cow, in estimating the quantity of food consumed.

The next meeting will be the last of the season, at which all, having facts, or opinions, to offer, having a bearing upon the science of agriculture, are at liberty to express their views. It is hoped that the last meeting will be a full one.—*Mercantile Journal.*

DONATIONS TO THE MASSACHUSETTS HORTICULTURAL SOCIETY.

We sometime since announced the liberal donations of the Hon. Samuel Appleton and John A. Lowell, Esq. to the Massachusetts Horticultural Society, and it now gives us much pleasure to lay before our readers the letters accompanying those donations, together with acknowledgements of the receipt of them by the President, M. P. Wilder, Esq.

Boston, Sept. 15th, 1845.

To Marshall P. Wilder, Esq.,
President Massachusetts Horticultural Society.

Sir—I have the honor to acknowledge the receipt of your letter, of the 8th inst., with a polite invitation from the Mass. Horticultural Society, to attend their 17th Anniversary, on the 17th, 18th, and 19th inst., at Horticultural Hall, in School St., to be consummated with a Festival at Faneuil Hall, on the 19th, at 5 o'clock, P. M.

For this very flattering invitation, I return to yourself individually, and to the Society, my sincerest thanks, and I very much regret it will not be in my power to accept the kind invitation and attend the Festival, on the 19th.—It would afford me great pleasure to meet with the Society that has done so much, within a few years, for the improvement of Horticulture, in the vicinity of Boston. Agriculture the most useful, and Horticulture the most pleasing, of all arts, have fully kept pace with the rapid progress of the age in other departments of activity, for which the community are largely indebted to the Mass. Hort. Society.

With the view of giving further aid to the Society in its very laudable exertions, I send you enclosed One Thousand Dollars, to be invested as a permanent fund; the interest arising therefrom to be appropriated annually in premiums for improvements in the arts to which the Society is devoted, in such manner as it shall direct, for producing trees good for food and flowers pleasant to the sight. I wish continued success to the Society, and that the agriculturalists who make beds of roses, and bring forth such good fruits and beautiful flowers for others, may themselves be rewarded and find through life a flowery path, free from thorns. I have the honor to be, sir, with great respect, your most obedient, most humble servant.

SAMUEL APPLETON.

Boston, March 16th, 1846.

To the Hon. Samuel Appleton.

Sir—I have the pleasure to inform you that your liberal donation of *One Thousand Dollars* in aid of the object of the Massachusetts Horticultural Society, has been invested in the *Hospital Life Insurance Company,* as a Permanent Fund, the income of which will be dispensed in *Gold and Silver Medals,* to be denominated the Appleton Medals.

Permit me, sir, in behalf of the Society, to tender you their thanks for this act of munificence, and to assure you that it will be held in grateful remembrance as a mark of your interest in the welfare of this Institution—and, when at last "the silver chord" of your life is loosed, and "the golden bowl broken," your name will shine with a lustre far surpassing the brightness of the testimonials with which we perpetuate it.

With sentiments of the highest esteem, and an ardent desire for a continuance of your health and happiness, I have the honor to subscribe myself your grateful, most obedient servant,

MARSHALL P. WILDER, President.

—

Boston, 24th March, 1846.

To Marshall P. Wilder, Esq.,
President of the Massachusetts Horticultural Society:

Sir—I have the honor to acknowledge the receipt of your favor of the 16th inst., informing me that the donation made by me of One Thousand Dollars, in aid of the objects of the Massachusetts Horticultural Society, has been invested in the Massachusetts Hospital Life Insurance Company as a permanent fund, the income of which will be dispensed in Gold and Silver Medals, to be denominated, "The Appleton Medals."

This disposition of the money, were it less flattering, would meet with my entire approbation, and as it is, the Society will please to accept my best thanks for thus perpetuating my name in Medals of Gold and Silver.

For the kind expressions of the Society and of yourself, so beautifully conveyed in your letter, I offer my heartfelt thanks, with my best wishes for the continued success of the Massachusetts Horticultural Society; and may the President who shall succed to your office be ready as you have uniformly been, in season and out of season, to advance the best interest of the Society.

With my best wishes for your health and happiness, I have the honor to be, sir, with great respect, your sincere friend, and most obedient, most humble servant, SAMUEL APPLETON.

—

Boston, Feb. 27th, 1846.

Marshall P. Wilder. Esq.,

Dear Sir—I have observed with much interest the very successful exertions made by the Massachusetts Horticultural Society to perfect the culture of flowers and fruits, and to diffuse through our State knowledge and taste in useful and ornamental gardening. I cannot, from my avocations, actively co-operate with them; but I wish to contribute in a moderate way, to the promotion of their objects. For this purpose I send you $1000, which I wish to have invested; the income to be applied as the managers may determine.

I am yours truly, J. A. LOWELL.

—

Boston March 20th, 1846.

To John A. Lowell, Esq.,

Sir—I have the honor in behalf of the Massachusetts Horticultural Society, to acknowledge the receipt of your favor of the 27th ultimo, enclosing One Thousand Dollars for the purpose of diffusing "through our State, knowledge and taste in useful and ornamental gardening." I am instructed by the Society to inform you that this sum has been invested as a Permanent Fund in the Mass. Hospital Life Insurance Company, and that the interest accruing therefrom, is ordered to be annually distributed in Medals bearing the name of Lowell.

The value of those memorials will be the more highly appreciated, perpetuating as they do, the name not only of the son, but that of the sire; of him who was a pioneer in the Horticulture of New England, and the early and warm friend of this association; a name, also, endeared to our city by an act of enlarged beneficence and good will to man.

In transmitting the enclosed vote of thanks, permit me to assure you of the gratitude of the Society for this liberal token of your approbation.

With great respect and esteem, I am sir,
Your obedient servant,
MARSHALL P. WILDER, President.

Ploughing near Salerno. The fields being without fences, have an open look; and the mingling of men and women together in their cultivation, gives them a chequered appearance, and renders them very picturesque. In the middle of a large green wheat field would be a group of men and women weeding the grain; the red petticoats and the blue spencers of the latter contrasting beautifully with the color of the fields. In one plot of ground I saw a team and a mode of ploughing quite unique, yet withal very simple. The earth was soft, as if already broken up, and needed only a little mellowing: to effect this, a man had harnessed his wife to a plough, which she dragged to and fro with all the patience of an ox, he in the mean time holding it behind, as if he had been accustomed to drive, and she to go. She with a strap around her breast, leaning gently forward, and he bowed over the plough behind, presented a most curious picture in the middle of a field. The plough here is a very simple instrument, having but one handle, and no share, but in its place a pointed piece of wood, sometimes shod with iron, projecting forward like a spear; and which merely passes through the ground like a sharp-pointed stick, without turning a smooth furrow like our own.—*Letters from Italy.*

Soil for the Magnolia. Our readers may gather information from the following, by David Thomas:

Peaty earth, mixed with silicious sand, seems best to agree with delicate feeders, but soils in which peat forms no considerable portion may answer in some cases. Several years ago I procured a Chinese Magnolia. It flowered once or twice, but became sickly, and its leaves lost its fine green. Being at a friend's house among the sand hills of Junius, I told him I wanted a bushel or two of the poorest soil of his farm; and just such as Indian corn might grow in, with pale yellow leaves, and perhaps a foot high. In the spring I removed all the earth around the magnolia, as well as I conveniently could without disturbing the roots, and applied the sterile mass, three or four inches in thickness. In a month or less the leaves resumed their fine green, and it has continued vigorous ever since.

From the American Agriculturist.

EXPERIMENTS WITH GUANO.

As the time approaches to determine what manures shall be used for spring crops, I take the liberty of sending you what I know of the effects of guano the past season. It is little to be sure; but as I feel much better satisfied of its value than before this experience, perhaps it may have the same effect upon others. At least one-half of the experiments I have seen tried have failed, and the experimenters heartily discouraged and frightened from further use of it; not by any fault of the manure, but from want of care in using it.

The most favorable results, as yet, have been with wheat, applied both at the time of sowing and in spring. In most cases it has been sown broadcast, in a pure state, without being mixed, and consequently liable to great loss by evaporation, unless the soil by chance contained something capable of retaining the gases. I presume in this way its effect will not be seen for more than one or two crops, and will give rise to the opinion that it will not last.

Experiments on corn have not done as well. In some cases, half a gill has been thrown on the crop, and but slightly mixed by the planter, the corn carelessly dropped and covered; there most of it lies still, for aught I know: one thing is certain, not more than half of it has yet made its appearance above ground. In other instances, it has been mixed with rich earth, or coal ashes, just before using, in proportion of two or three times its bulk, amounting to about the same thing as not being mixed at all, so far as preventing the grain from germinating is concerned; these all shared the same fate as the first. No one complains of its effects on what did get above ground; in fact it is admitted to do good above most manures of the same value; but then for this crop it is considered a kind of kill or cure medicine, which they are not over anxious to try except in desperate cases. I do not know one instance in which the application has been made in a way to receive the full benefit of its action, not excepting the small experiments made by myself.

I bought a few hundred pounds last spring without much faith, and with small hope of getting my money back, which was rather lessened than increased by the tough stories I had read of its astonishing effects: it seemed to require something in addition to its own merits to make it sell. You may suppose, and it is the case, that, under the circumstances, I was not over particular in using it.

On the 1st of April, I mixed a quantity with damp coal ashes, which immediately caused such an escape of gas as my eyes and nose never before met with from manure. This began to give me a better opinion of my guano, and although I was well aware some of the best of it was fast departing, I felt glad of it, for it was some satisfaction to know from experience that it was formed of such material. I immediataly spread some of the mixture over a piece of winter wheat, on the poorest gravelly hill in the field, at the rate of 180 pounds of guano to the acre. I thought if it would show itself there, it would anywhere. For grass it was used in the same way. For corn, mixed the same, and put in the hills, at the rate of 300 pounds guano per acre.

As the experiments were not commenced with a view to test its value minutely, none of the crops were measured; but from a careful examination at harvest, I think the wheat was increased *one-half*, and the straw lengthened some six or eight inches, over that adjoining on the same kind of soil. The heads were well filled, indicating heavy weight of grain; whilst their neighbors stood erect as if waiting for a further supply. The increased growth of the grass was very perceptible in ten days after the application, and the crop of hay increased at least *one-third*.

The corn, although not more than two-thirds of it came up, was better than any adjoining, treated with same value of poudrette, ashes, and sugar-house dirt, all of which, from previous experience, I hold in high estimation. On some rows near I tried some urine, which has surpassed either of the others; but as I did not know its cost, could not ascertain its comparative value. I obtained enough for an acre in return for a little work and an outlay of 50 cents; and plenty of it may be had on most farms at the same rate.

I do not anticipate lasting effects from these applications of guano, from its not being properly mixed before sowing, and then used as a top-dressing (except on corn) on a loose soil, with everything to facilitate the speedy evaporation of its soluble parts, and little to prevent it; it would be singular if it proved beneficial for a longer time. I gave half a handful to some hills of corn when they were about 18 inches high, but saw no effect.

To sum all up, I have no doubt of its importance as a manure, more valuable than any in general use, requiring only a few judicious application to bring it into the good graces of even old-fashioned farmers. We look to you as head-master for directions. Issue the order, we will obey, only don't talk about too small quantities, we are not accustomed to that in this land of moss bankers and muscles.

D. K. Y.

Syopeth, (late Oyster Bay,) *Long Island.*

MASS. HORTICULTURAL SOCIETY.

PREMIUM LIST FOR 1846.

PREMIUMS FOR VEGETABLES.

The Committee on Vegetables submit to the Executive Committee, for their approval, the following List of Premiums, to be offered the ensuing year. Amount appropriated, One Hundred and Fifty Dollars.

Asparagus.—For the earliest and best, not less than 3 bunches, a premium of $5 00

Beets.—For the best, (pure blood beet,) during the season, not less than 12 roots, a premium of 5 00

Broccoli.—For the best 3 heads, a premium of 5 00

Beans—For the best and earliest peck of string beans, a premium of 3 00

For the best and earliest Lima beans, not less than 2 quarts, a premium of 3 00

For the best and earliest variety of shell beans, a premium of 4 00

Cucumbers.—For the best pair under glass, previous to the first Saturday of June, a premium of 5 00

For the 2d best do., a premium of 3 00

For the best and earliest, of open culture, a premium of 3 00

Cauliflowers.—For the best and largest, during the season, not less than 3 heads, a premium of 5 00

For the 2d best do., a premium of 3 00

Corn.—For the best and earliest sweet corn not less than 12 ears, a premium of 3 00

Cabbage.—For the best drumhead cabbage, during the season, not less than 3 heads, a premium of 5 00

For the 2d best do., a premium of 3 00

For the best Savoy cabbage, during the season, not less than 3 heads, a premium of 3 00

For the 2d best do., a premium of 2 00

Egg-Plants.—The best display during the season, a premium of 5 00

Lettuce.—For the best 6 heads, before the 1st Saturday in July, a premium of 3 00

Potatoes.—For the best and earliest peck, previous to August 1, a premium of 3 00

Pease.—For the best and earliest peck in June, a premium of 3 00

Potatoes.—For the best *new* seedling, of superior quality, for the table, a premium of 10 00

Rhubarb.—For the largest and best, previous to the first Saturday in July, not less than 12 stalks, a premium of 5 00

Squashes.—For the best pure Canada squashes, not less than 6 in number, a premium of 5 00

For the greatest variety exhibited during the season, a premium of 5 00

Tomatoes.—For the best and earliest, not less than 1 dozen 5 00

Vegetables.—For the best display and greatest variety, at the weekly exhibitions, during the season, a premium of 10 00

For the 2d best do., a premium of 5 00

For the best display and greatest variety, at the annual exhibition, a premium of 10 00

For the 2d best do., a premium of 7 00

For any new variety of vegetables, suitable for the table and worthy of cultivation, other than seedling potatoes, a premium of 6 00

Celery.—For the best and largest blanched, not less than 6 roots, a premium of 5 00

For the 2d best do., a premium of 3 00

$150 00

For the Committee,
A. D. WILLIAMS, Jr., *Chairman.*

ORGANIC IMPROVEMENT OF DOMESTIC ANIMALS.

Sheep and other animals were subdued and domesticated, long before their bipid captors and masters were able to keep a record of their doings for the benefit of their posterity. Hence we know little of the original stock from which our domestic animals have descended, and less of the early treatment they received, at the hands of our own progenitors. Nor is this information important. It concerns us mainly to understand how a change of food, temperature, and of all surrounding circumstances, will either *improve* or *deteriorate* the organic structure and natural functions, which transform for the practical farmer his cultivated plants, their seeds and roots, into wool, beef, pork, milk, lard, butter, and cheese. That there is a wide difference in the results obtained, by the operation of this living machinery in different animals, no observing man can doubt. Of two cows of equal weight, and consuming equal quantities precisely alike, one will elaborate for its owner 18 quarts of milk in 24 hours, while the other can form but 9 quarts in the same length of time. A pig, whose organization apparently is nearly perfect, will ela-

borate from a given amount of raw material, twice as much flesh and fat, as another whose respiratory and assimilating machinery are very defective.—Experience and science alike demonstrate the truth of the remark that it takes 50 per cent. more food to produce a given amount of muscular strength and power of locomotion in one horse or ox, than is required in another. Animals that had a common parentage ten generations back, now possess not only widely different forms, but organic and constitutional peculiarities, of great importance to those that may become rich or poor, according to the well or ill management of their herds and flocks. Eminent success alone attend *skill* in the breeding and keeping of domestic animals. This valuable skill is acquired by close observation, and studying the uniform laws of nature that governs the growth, maturity, and decay of organic beings. The most important and material changes in the development of the organs of animals, and in the function of each organ, are made during the period that elapses from the first formation of the embryo, to the maturity of each living complex structure.

"As the twig is bent the tree's inclined."

The plasticity of young animals and plants, and the extreme changes that may be wrought in their forms and habits are truly wonderful. The human brain itself can be moulded in infancy into any shape to suit the whim or taste of a "flat-head" or a "round-head" Indian. Nor is there a single mental or physical function in the human system, that may not be either *improved or impaired* by the good and bad influences which are brought about to bear upon it. The science of physiology is a noble science. It enables cultivated reason to trace results—the products of animal life, such as flesh, fat, milk, and wool,—back to their known causes and elements.

I can hardly expect to give you an outline of the organization and workings of this complex vital machinery. There are, however, a few cardinal points in this matter, which I will endeavor to make clear and intelligible. One is, that no animal or plant can possibly transmute one simple elementary substance into another. If a hen can be fed on food quite destitute of lime, the organ of her system can not form an egg-shell; so if a child, calf, or colt, be kept on food that lacks phosphate of lime, its bones will be soft and cartilaginous.—No other minerals can be changed into lime and phosphorus.

Animal fat is a compound made up of carbon, hydrogen, and oxygen; and no other simple elements can possibly make it. Lean meat and wool contain the same elements, with the addition of nitrogen, sulphur, and several other earthy ingredients in minute quantities.

Knowing that no animal can create anew one particle of matter, and that each compound product has its peculiar constituent elements; knowing also how much of those elements is contained in any article of food, we can judge of its fitness or unfitness to produce either bone, muscle, fat, milk, wool, or any other animal product. In other words we can wisely adapt our *means* to our *ends* we have in view.

Suppose a farmer had 100 hens in his poultry yard, and he desired them to lay as many and as perfect eggs as possible. Would it be an unreasonable prescription to say to him that "you must feed them liberally on food which contains not only lime, but all the elements of the contents of an egg-shell in a concentrated form?"—*Western Cultivator.*

CIRCULATION IN VEGETABLES.

The structure of plants is exceedingly simple and nearly alike in all the different classes, so far as they have been examined. The important parts which serve to provide for their nourishment and growth, are the root, the stem, and the leaves.—These are all formed of a variety of vessels and tubes, in which the sap and other fluids circulate. The sap is in the first place taken into the roots, probably by means of the long fibrous filaments which are usually extended in every direction, and conveyed into what are called the central vessels. These are so called from their being arranged, in annual shoots, and herbaceous plants, around the pith or centre of the stem. They are constructed of fibres which are wound spirally around them, and are thence sometimes called the spiral vessels. This arrangement probably contributes to the motion of the fluids they contain. By these vessels the sap is carried up the stem and distributed to the different branches, and thence to the leaves, flowers, or fruit. In the leaves it circulates and is there exposed to the influence of light, heat, and air, and is no doubt perfected and elaborated by the process which it undergoes. Returning from the leaves, it descends in a different set of vessels situated in the bark, and in its descent contributes to the growth and nourishment of the plant by depositing new layers of vegetable matter between the bark and the wood.

This is the course of the circulation in annual plants, in which there is an entirely new growth every year from the root. But in trees or shrubs where the same trunk or stem continues from year to year, the arrangement, though essentially the same, is a little varied. The central vessels are not situated directly around the pith, but in the external layer of wood called the *alburnum*, which is always the growth of the preceeding year, and performs this office only for one season, being afterwards surrounded and enclosed by a new layer of the same kind. Hence the trunks of trees are formed by layers of wood, which have been yearly deposited around the centre, and have successively afforded a passage for the sap, by means of the central or spiral vessels, to ascend into the branches and leaves. From the leaves the sap descends through the vessels of the internal layer of the bark, as in the former case, and in its descent gradually contributes to the formation of an alburnum for the next year. That part of the bark, also, that has once served the purposes of circulation, like the alburnum, is afterwards thrown aside, and its place is supplied by a new layer formed on its inside between it and the alburnum. Hence the large quantity of thick and dead bark which is often accumulated upon the outside of the trunk and branches of old trees.

This is a slight sketch of some of the most important points in the vegetable circulation. It appears from this, that the principal seat of the growth and nutrition of plants is in the bark and alburnum, and that all the new matter yearly added, is deposited on the outside of the latter and inside of the former—that the growth of one year is only subservient to the circulation of the next, and is ever afterwards of use merely in giving strength and stability to the trunk, in order to support the increasing size and weight of the branches and leaves. The wisdom and beauty of this provision, by which that portion of the plant, which has become useless for every other purpose, is thus made to answer a very important end, are sufficiently obvious; and it is rendered necessary by the circumstance that plants do not, like animals, arrive at a definite size and there cease, but go on growing to an indefinite extent, and consequently require corresponding increase of strength in those parts which are to support them.—*Smellie.*

From the Maine Farmer.

INDIAN CORN.

To the Editor of the Maine Farmer:—Every farmer wishes, of course, to realize the largest possible amount of income per acre from his cultivated crops. But the farmer, while making up his calculation of profit, should never forget to take into the account the amount added to or substracted from the fertility of the soil. One farmer may think proper to raise all the corn he can and sell the same; but farmer Thrifty, aware of the immense value of the manure, converts his corn into pork. Very well, let us hear the result. We will suppose that farmer Thrifty realizes only fifty cents per bushel for his corn, and the other farmer gets eightythree cents per bushel. The farmer who sells his corn exhausts his farm, and at length is only able by hard labor to raise sufficient for the consumption of his family. Farmer Thrifty pursues most perseveringly his plans of increasing his manure by artificial means. His crops of corn increase yearly in bulk, which enable him to fatten more and more swine—add more and more to his capital, and increase the quantity of his manure more and more each succeeding year. And in fine, it is easy to foresee that farmer Thrifty will grow rich, while the other farmer who sells all his corn will grow poor.

But, in point of fact, what we really need in agriculture is certainty and demonstration. I have set down the profit of farmer Thrifty at fifty cents per bushel, but who knows precisely what corn is worth per bushel for making pork? A series of experiments will place this question in the right point of view, and settle the same, at least accurately enough to answer all practical purposes.

The disease which has attacked the potatoe may in reality prove a blessing rather than a curse to our country. Our farmers may be driven by necessity to employ corn instead of potatoes to fatten their swine, and by so doing may be led to the discovery of facts which may prove of immense advantage to the agricultural interest. And, in conclusion, Mr Editor, I will observe that I have merely touched upon a subject which I hope may provoke some abler pens. Hope that sound theories may be promulgated, and these fully sustained by experiments properly conducted.

J. E. Rolfe.

Rumford, March, 1846.

Sap Heater. J. T. Rich, of Shoreham, Vt., has invented a method of advancing the procees of sugar making without any extra cost of fuel, by simply suspending over, or inserting in the flue of a sugar making arch, a tin or copper cylinder about six inches in diameter, and twenty or more inches long, and closed at both ends, with a tunnel inserted on the top, at one end, and a discharging pipe at the other, the upper part of which is lower than the tunnel. By passing the sap through this, it will be discharged boiling hot into the boiler, and consequently hasten the process of evaporation in a very considerable degree.—*N. Y. Mechanic.*

NEW ENGLAND FARMER,
AND HORTICULTURAL REGISTER.

Edited by Joseph Breck.

Boston, Wednesday, April 9, 1846.

POTATO PLANTING THIS SPRING.

It is high time for our farmers to consider what will be right for them to do respecting the cultivation of Potatoes this season. And the consideration of this question becomes of the greatest importance since Dr. Lindley, the editor of the London Gardener's Chronicle, in the latest number received by the last steamer, boldly, we think rather unphilosophically, advises the farmers of England not to plant any more potatoes; founding his advice on the fact, that all the potatoes forced for early consumption in England (a practice by the way which is there carried to an enormous extent) had already got the disease and were worthless; thus showing that it had not, as many expected, exhausted itself, but would in all probability prevail this year with the same virulence as last.

On reference to our paper of January 28, page 243, there will be found an extract of a letter from a most valued correspondent in New Hempshire, stating that in 1845 he planted the sound pieces cut from diseased potatoes and applied, according to the advice of Mr. Teschemacher, at the first hoeing, a large ladle full of a mixture of equal parts of salt, lime and ashes to each hill, and that he had not 20 diseased potatoes in his whole crop; that most, but not all, his neighbors suffered very severely from the disease.

We will now lay before our readers part of another communication from a most respectable agriculturist in West Roxbury, contained in a letter to a friend:—

"West Roxbury, March 17 1846.

"My potatoes (Carter variety) were last year planted on the 24th April, on a piece of ground measuring little more than an acre, naturally wet and springy, but which I had thoroughly drained the year previous; a good soil but very full of small stones. The manure was taken from the barn-yard long and unrotten, and was dropped by the fork in the furrows. The sets were taken from good sized potatoes cut in halves, and after being rolled in ground plaster were dropped upon the manure, two in each hill, and the hills were made three feet apart each way. A sharp frost on the night of the 24th of May cut the tops all down. On the 9th June, at the first hoeing, I applied a very large table spoonful of *Glauber salts* (sulphate of soda) *and air slacked lime*, mixed in equal parts, to each plant, and this was immediately covered with the hoe.

"The season will be long remembered as a very dry one, and I obtained only *ninetyeight* bushels from the piece. But although the quantity was small, the quality was remarkably good, as you may satisfy yourself from the sample I send you. They were kept shaded from the sun as much as possible while being dug, and have been kept in a bin, in my vegetable cellar, out of the way of frost. The rot has been prevalent in my neighborhood, and of the crop raised in the next field (long reds, I believe) a large proportion has been lost. As it was owing to your suggestion that I first used the salt, &c. I should have given you the result before, but I thought it most prudent "*not to whistle till out of the wood.*"

The latter part of this communication seems to rebut the opinion that atmospheric influence occasions the disease, as no fence between two fields could possibly prevent the exertion of this influence on two adjoining crops; nor according to evidence can the Carter variety claim absolute exemption from the disease. It seems to us that the general character of the potato has deteriorated, and that the sets will therefore offer more favorable circumstances for the disease than before. It also seems to us that on the fungus theory the spores must be more generally disseminated than last year, and probably exist in almost every soil and dung heap; and this opinion is strengthened by the facts recited by Dr. Lindley. The general mass of evidence we have seen seems to point with much force to the probability that lime and saline mixtures, will, according to the opinions emitted by Mr. Teschemacher, prove remedial. We therefore ask our farmers not to lose courage, but to try carefully such remedies as have been offered, and in so doing not to try too many things together, and all at once—so that whether the experiments succeed or fail they may know to what to attribute the result. Should all fail this year it will be time enough then to talk of giving up the cultivation of the potato. We can scarcely doubt, however, that these experiments will result in the discovery of certain remedies for this dire and disgusting disease.

Since writing the above we have received the following interesting communication, which fully confirms the theory advanced. The respectable source from which it emanates gives it additional importance.:—

Mr Breck—In the last volume of the N. E. Farmer, Nos. 16 and 20, you gave communications from Mr. Teschemacher, on "the Disease in Potatoes," which seemed to me more rational and worthy of consideration than any other, among the numerous articles I saw, in relation to that subject.

After careful and repeated examinations of diseased potatoes, Mr. Teschemacher became satisfied that the rot was occasioned by a minute species of fungus, and suggested salt as an appropriate remedy in the case.

I had two or three acres planted with potatoes in 1844, and, in common with most others in this vicinity, suffered the loss of a large portion of the crop. The ground had been in mowing for perhaps fifty years, with the exception of a single corn crop a few years previous; and the old sward, with a dressing of manure and a favorable season up to the time of the appearance of the blight, brought forward a growth of potato tops as heavy and vigorous as one could reasonably wish, and gave promise of a most abundant harvest. In August, the change commenced, and in a few days hardly a green leaf was to be seen in the fields. The premature death of the tops prevented the further growth of the potatoes, and of those which were grown, a large portion rotted in the ground; so that not more than a fourth part of the anticipated crop of good potatoes, was ultimately obtained.

The diseased potatoes and tops were left on the ground; and as the crop carried from the field was considered too small to essentially impair the ability of the soil to produce another crop, it was (after reading Mr. Teschemacher's communications above referred to) thought expedient in this case—contrary to good practice in ordinary cases—to follow with the same crop the following year: for if the cause of the mischief, whatever it might be, had done its work and lived out its day, that ground might be expected to give as fair a crop as any other; and, moreover, should the force of the evil be vastly increased by the presence of the diseased potatoes and decayed tops left on the ground, (as was a prevalent opinion in some places,) it would afford a most satisfactory opportunity of testing the soundness of Mr. Teschemacher's views; and, furthermore, a removal to another field offered no reasonable hope of escaping the effects of a disease, whose cause is, as yet, so mysterious, and which, at the same time, is so universally prevalent and destructive.

Accordingly, before ploughing, in the spring of 1845, one bushel and a half of medium coarse salt per acre, was spread broadcast, and then left one or two weeks, that it might dissolve and mingle with the soil. After ploughing and planting, the same quantity was again sown upon the ground, making, altogether, three bushels per acre.

The usual mode of culture was pursued, and a very fair crop, of excellent quality, obtained. The tops were apparently healthy through the season, and not a diseased potato was found at the time of harvest; nor have I, up to the present time, seen or heard of one being discovered among the lot. So much for my own experience: I will now give a fact or two, from that of others.

Last autumn, two of my neighbors, Mr. C. and Mr. D., purchased, for their winter supply, a lot of Carter potatoes of the finest quality, and, to appearance, perfectly sound at the time they were stored in the cellars in the usual manner. In a few weeks, the potatoes in both cellars were found to be rotting; and advice in the case, was solicited from the neighbors. Mr. Teschemacher's theory in relation to the disease, was mentioned, and immersion in brine recommended as an experiment.

Accordingly Mr. C. mixed a tub of brine, in the proportion of about one quart of rock salt to six quarts of water; and assorting out, as worthless, all those tubers where the rot was readily discoverable, the sound potatoes were merely dropped into the brine and then thrown out, dripping, into a pile, where they remained, until used, without the least further decay, and retained all their good qualities. Many of them however, showing, by small hard brown spots upon the surface, that the plague had made a beginning on them before the brine was applied.

Mr. D. having but liitte faith in the application of brine, and to save his potatoes with the least labor, merely spread them very thin upon the floor of his dry cellrr, having first selected out those which were defective, and the rot was gradually arrested, nearly in proportion as the potatoes became dry upon the outside; several weeks being required before the progress of decay was arrested; whereas in the case of Mr. C., notwithstanding his potatoes, after immersion in the brine, were for sometime dripping with moisture (a state one would suppose highly calculated to promote decay) the termination of decay was prompt and immediate.

On the whole subject I give the facts as I have them, and without considering them as proof positive that salt is a full and perfect remedy for "the disease in potatoes," I cannot but express the hope that Mr Teschemacher, in the early application of his chemical knowledge and scientific research given to the subject, has conferred a substantial benefit upon the farming community. Yours, respectfully,

WILLIAM CLARK.

Northampton, March 28, 1846.

We are indebted to Luther Tucker, Esq., editor of the Albany Cultivator, for a copy of a neat work of 220 pages, entitled "The Fruit Culturist, adapted to the Climate of the Northern States, containing Directions for Raising Young Trees in the Nursery, and for the Management of the Orchard and Fruit Garden. By John J. Thomas. Illustrated with engravings. New York: Mark H. Newman, 199 Broadway, 1846." We have not had time to give the book a thorough reading, but from a hasty perusal we believe it eminently calculated to benefit the Horticulturist.

The Reports of the Flower and Vegetable Committees of the Massachusetts Horticultural Society for April 4th, are unavoidably omitted. They shall appear next week.

THERMOMETRICAL.

Reported for the New England Farmer.

Range of the Thermometer at the Garden of the proprietor of the New England Farmer, Brighton, Mass. in a shaded Northerly exposure, to the week ending April 5.

April, 1846.		7 A.M.	12, M.	5, P.M.	Wind.
Monday,	30	36	46	44	N. W.
Tuesday,	31	30	48	42	N. E.
Wednesday,	1	27	44	40	N. W.
Thursday,	2	27	46	40	N.
Friday,	3	32	46	34	N. E.
Saturday,	4	22	44	36	E.
Sunday,	5	32	57	54	N.

BRIGHTON MARKET.—Monday, Apil 6, 1846.

Reported for the N. E. Farmer.

At market 410 Beef Cattle, 30 pairs Working Oxen, 25 Cows and Calves, 400 Sheep and 3000 Swine.

Prices — *Beef Cattle.*—The prices obtained last week were fully sustained, and op thin Cattle an advance was effected. We quote Extra $6,50. First quality $6,25. Second quality $5,75 a $6,00. Third quality $4,75 a $5,50.

Working Oxen.—Sales $55, $62, $70, $75, $78, $85 and $93.

Cows and Calves.—Sales $19, $23, $25 and $32.

Sheep.—Sales of lots from $3 to $5,00.

Swine.—Lots to peddle 4 1-2 and 5 1-2. Very small Shoats 4 3-4 and 5 3-4. Old Hogs, Barrows 5. At retail from 5 to 6 1-2.

WHOLESALE PRICES CURRENT.

Corrected with great care, weekly.

SEEDS. Herds Grass, $0 00 a 2 50 per bushel. Red Top 65 to 70 cents. Clover—Northern, 11 to 11½c.—Southern, 10 a 00 c. Flax Seed. $1 50 per bushel. Lucerne, 33 c. per lb. Canary Seed, $2 25 a 2 50 per bushel. Millet, 1 75 to 2 00

GRAIN. The Grain market has been extremely quiet the past week.

Corn—Northern, new, bushel 77 a 78—Southern, round yellow, 74 a 76—Southern flat yellow, 72 a 73—do. do. white 68 a 69—do New Orleans, 65 a 72—Barley 00 a 00—Rye, Northern, 83 a 85—do. Southern, 00 a 00—Oats Southern, 43 a 44—Northern do. 00 to 48—Beans, per bushel 1 25 a 1 50.—Shorts, per double bush. 40 a 60—Bran, 30 a 40.

FLOUR. The market has been depressed by the auction sales, and at the close all descriptions were more dull of sale, at a further slight decline.

Baltimore, Howard Street, 4 mos. cr. new, $5 12 a 5 18—do. wharf, $0 00 a 5 12—do. free of garlic, $0 00 a 0 00—Philadelphia do. 4 mos. $5 00 a 5 12—Fredericksburg, low P'd new $0 00 a 5 12—Alexandria, wharf, 5 12 a 5 18—Georgetown, $0 00 a 5 25—Extra do. 0 00 a 0 00—Richmond Canal, $5 25 a 0 00—do. City, $0 00 a 0 00—Petersburgh, City, $0 00 a 0 00—do. Country $0 00 a 0 00—Genesee, common, cash, $5 62 a 5 68—do fancy brands, $5 75 a 5 87—Ohio via Canal, $0 00 a 0 00—do do New Orleans, cash $5 12 a 5 37. Rye, $3 87 a 4 00—Indian Meal in bbls. $3 50 a 0 00.

PROVISIONS. The transactions in Pork have been at somewhat lower rates. Sales of Beef, to a fair extent, at quoted rates. By auction 25 cts Hams, pickled, at 5c; 4 ditto Shoulders.

Beef—Mess 4 mo. new bbl. $8 50 a 9 00—Navy—$7 50 a 8 50.—No. 1, $0 00 a 0 00—do Prime $5 87 a 6 00—Pork—Extra clear 4 mo. bbl. $13 00 a 00 00—do Clear $12 50 a 13 00 do. Mess, $11 50 a 12 00—do Prime $10 00 a 00 00—do Mess from other States,— a — —do Prime do do $0 00 a 0 00 do. Cargo do. 0 00 a 0 00—Clear do do $00 00 a 00 00—Butter, ship'ng, 10 a 11—do store, uninspected, 10 a 12—do dairy, 14 cts. a 18—Lard, No. 1, Boston ins. 7¼ a 7¾—do South and Western, 7 a 7½—Hams, Boston, 7½ a 8—Southern and Western, 7 a 7½—Cheese, Ship'g and 4 meal 5½ a 6—do new milk, 7½ a 0.

WOOL. Duty. The value whereof at the place of exportation shall not exceed 7 cts. per pound, 5 per cent. ad. val. All whereof the value exceeds 7 cts. per pound, 40 per ct. ad. val. and 3 cts per pound.

The demand for the various qualities of fleece and pulled Wool, has been steady at former prices.

Prime or Saxony Fleeces, washed, lb. 40 a 41 c.—American full blood, do 37 a 38—Do. 3-4 do 32 a 33—Do. 1-2 do 30 a 31—1-4 and common do 27 a 29—Smyrna Sheep, washed, 18 a 20—Do. unwashed, 10 a 14—Bengasi do 6 a 00—Saxony, clean, 00—Buenos Ayres unpicked, 7 a 10—do. do. picked, 10 a 13—Superfine Northern pulled lamb 33 a 36—No. 1 do. do. do. 27 a 30—No. 2 do do do 18 a 20—No. 3 do do do 14 a 16.

HOPS. Duty 20 per cent.

1st sort Mass. 1844, lb. 25 a 00; 2d do 00 a 00.

HAY. 20 to 00 per ton—Eastern Screwed $15 to 16.

EGGS, 15 to 18.

KENRICK'S NURSERIES,

NONANTUM HILL, NEWTON, NEAR BOSTON.

The subscriber is now ready to receive and devote his attention to all orders, with the aid of two most able and efficient men to co-operate, who have been 9 years at this establishment.

A splendid assortment of Pear Trees are daily expected from France, by the Moselle, from a first rate source, of Vitry.

Fruit, Ornamental Trees, Shrubs, Roses, Green House Plants, &c &c. Descriptive Catalogues will be sent gratis to all who apply.

Apple, Pear, Plum, Cherry, Peach and Nectarine Trees, a great variety of all superior kinds; Grape Vines, Gooseberries, Franconia and other Raspberries, Currants, Strawberries, &c.

Ornamental Trees of the most beautiful hardy kinds, including Limes or Lindens, Sycamores—Tyrol or Scotch Larch, Silver Leaved Abele, Horse Chestnuts, Elms, Weeping Willows, Magnolia or Umbrella Tree, Tulip Tree, Laburnum, Mountain Ash, Purple Beech and Evergreen Trees, &c. Shrubs, Everblooming Roses, Pæonies, Dahlias, &c Also Cactuses, Verbennas, and other most showy Green House Plants.

15,000 Peach Trees, of the most superior and productive kinds, for orchards for supply of our markets.

1,500 Vines raised in pots from single eyes, of the Black Hamburg and other superior Grapes, including several new kinds, from the London Horticultural Society, recorded last spring.

Written orders addressed by mail to the subscriber will be promptly executed, and Trees and Plants will be well packed in mats and moss, when ordered for distant places, and delivered at the depot or shipped in Boston, without charge for transportation to the city. Orders left with Messrs. JOSEPH BRECK & CO., at the New England Agricultural Warehouse, 51 and 52 North Market street, Boston; John G Locke, Lowell, or Eliphalet Wheeler, Framingham, shall receive the same prompt attention.

All orders left with the several authorized agents in Boston, should be directed particularly to

WILLIAM KENRICK.

Nonantum Hill, Newton, March 16. eptM17.

Choice Spring Bulbs and Roots.

The subscribers have just received from Harlem, in Holland, the following Roots and Bulbs.

1000 superfine Anemones, in 100 named sorts, $3 per doz.
1000 Ranunculas, in 100 named sorts (extra fine) $2 per doz.
200 Anemone Hortensis, $1 per doz.
200 Turkey Ranunculas, $1 per doz.

Also, a variety of Gladiolus, including Cardinalis, floribundus, Ramosus, &c.

Double Tuberose, Amaryllis formasissama, &c Anemones, and Ranunculus, should be planted as early in the season as possible JOSEPH BRECK & CO.

March 21, 1846.

FRESH GARDEN SEEDS.

For sale at Nos. 51 and 52 North Market street, (up stairs,) an extensive assortment of

GARDEN, FIELD AND FLOWER SEEDS, viz.

EARLY PEAS.

Cedo Nulli.	Prince Albert.
Smith's Early.	Bishop's Dwarf.
Early Frame.	Blue Imperial, and many
Dwarf Marrowfat.	other fine varieties.

MELONS, OF SUPERIOR SORTS.

Netted Cantaloupe,	Persian.
Black Rock.	Nutmeg.
Minorca.	Green Citron, &c.
Skillman's Fine Rock.	

Cuthill's Early Frame Cucumber, White Spine, &c.

Seymour's White Solid Celery—Large Asiatic Cauliflower.

TOMATOES.

Large Red.	Cherry, or Grape, red and
Large Yellow.	yellow, &c.
Pear Shaped.	

Broccoli, of various sorts—Early Cabbages, and every variety of Seed for the Garden.

March 18. JOSEPH BRECK & CO.

FARM FOR SALE,

Situated in Newton, on the Worcester Turnpike, about seven miles from Boston. Said Farm contains about fifty-five acres of good land. Has a two story House, Barn, Sheds, &c A part or the whole will be sold, with or without the Buildings. For terms, &c. apply to the owner living upon the premises, or to C. Aiken, No. 56, South street, Boston. WILLIAM AIKEN.

Feb. 11, 1846. pd. 2m. i. s.

APPLE SCIONS.

The subscriber can furnish the following Scions at 25 cents per dozen, except such as are otherwise marked.

Peck's Pleasant	River Apple
Lyscom	Sandwich Greening
Rogers' Fall Sweeting	Maiden's Blush
Late Sopsavine	Jones' Pippin
Mother Apple 50 cents	Porter
Northern Spy 50 cents	Benoni
Fameuse 37 1-2 cents	Gardiner Winter Sweet
Red Astracan 50 cents	Danvers Winter ditto
Minister 37 1-2 cents	Lecister ditto ditto
White seek no further 75 cents	Seaver ditto ditto
Gravenstein 50 cents	Golden Sweet (fall)
Mexico 50 cents	Early Sweet Bough
Fall Chandler 50 Cents	Pumpkin Sweet
Baldwin	Hubbardston Nonsuch
Russeting	Williams' Early
Greening	Esopus Spitzenburg
Yellow Bellflower	

Also, Pear and Plum Scions in great variety.

JOSEPH BRECK & CO.

Boston, March 29, 1846.

Guano! Guano!

The subscribers have for sale *GUANO*, of various qualities, from 37½ to $50 per ton, viz: 100 tons first quality of Peruvian, 100 do. do. do. Ichaboe, 100 do. second do. do.

JOSEPH BRECK & CO.,

N. E. Agricultural Warehouse and Seed Store, 51 and 52 North Market Street, (up stairs.) Boston.

April 8.

LARGE BUCKTHORNS.

JOSEPH BRECK & CO. have for sale 5000 extra large size Buckthorns. April 4.

FOR SALE,

A full blooded Narragansett *entire* HORSE. This breed has been in the family of the late Governor Jay, for the last century. They are *rackers* and not *pacers*. He is 8 years old, and the only *entire* Horse of the breed which is left; he is very fast, will rack his mile *within three minutes* Horses of this breed are highly esteemed as saddle horses for Ladies and Gentlemen, and bring a very high price. Apply to

JAMES R. DAY, No. 51 Liberty street, New York.

March 24.

SLAKED LIME

50 casks for sale at a low price, by JOHN B. HATCH, wharf at foot of Tufts' street, near Chelsea Bridge, Charlestown. March 24.

HORTICULTURAL TOOLS.

A few cases of superior Horticultural Tools, for gentlemen or ladies' use For sale by JOS. BRECK & CO., 51 and 52 North Market Street.

Boston, Feb. 2.

HERDS GRASS OF EXTRA QUALITY.

The subscribers have received a few tierces of extra fine *HERDS GRASS SEED*, perfectly free from all foul seed, which they can confidently recommend to farmers for August sowing. Also, their usual supply of good *GRASS SEED*, of all kinds. J. BRECK & CO.

Nos. 51 & 52, North Market street, up stair

HOES,

Of different patterns, for sale at the New England Agricultural Warehouse, 51 and 51 North Market street, by

April 1. JOSEPH BRECK & CO.

SPRUCE POLES.

1000 dozen suitable for Rustic Fences;
1000 dozen Dahlia and Pean Poles;
2000 Spruce Poles 10 to 30 feet in length;

For sale by MOSES FRENCH, jr. Maine Wharf, Broad Street, near the bottom of Summer street.

March 29, 1846. 3m.

FULL BLOODED CHINA FOWLS.

For Sale, 10 pairs full blooded China Fowls, the males when dressed will weigh 9 or 10 pounds. Apply to JOS. BRECK & CO.

March 29. Agricultural Warehouse, Boston.

FARMER WANTED.

Wanted a good Farmer, (an American,) with a small family, to take charge of a Farm in Brookline. Apply to EBENEZER FRANCIS, No. 60, State street.

MISCELLANEOUS.

MULTUM IN PARVO.

A bushel of wheat weighing 62 pounds contains 550,000 kernels.

In Greece it was the custom at meals for the two sexes always to eat separately.

The Romans lay on couches at their dining tables, on their left arms, eating with their right.

It is estimated that 245,000 persons have been annually killed in battle, for the last four thousand years, to say nothing of the wounded.

Noah's ark was 547 English feet long, 91 broad and 54 high.

The walls of Nineveh were 100 feet high and thick enough for three chariots abreast.

Babylon was sixty miles within the walls, which were 75 feet thick and 300 feet high.

The largest pyramid is 481 feet high.

A clean skin is as necessary to health as food.

On one of the peaks of the Alps there is a block of granite weighing, by estimate, 131,568 tons, so nicely balanced on its centre of gravity, that a single man may give it a rocking motion.

Vinegar boiled with myrrh or camphor sprinkled in a room, corrects putridity.

Hops entwine to the left, and beans to the right.

Gold may be beaten into leaves so thin, that 280,000 would be only an inch thick.

The earth is 7,916 miles in diameter, and 24,880 miles round.

Forests of standing trees have been discovered in Yorkshire, England, and in Ireland, imbedded in stone.

Fossil remains on the Ohio prove that it was once covered by the sea.

When the sea is a blue color it is deep water; and when green, shallow.

A map of China made one thousand years before Christ, is still in existence.

The 14th day of January, on an average of years, is the coldest day of the year.

In water, sound passes at the rate of 4,708 feet per second. In air 1,142 feet per second.

In the Arctic regions, when the thermometer is below zero, persons can converse at more than a mile distant. Dr Jamison asserts, that he heard every word of a sermon at a distance of two miles.

The first newspaper published in Virginia was established in 1780. The subscription was *fifty dollars* a year, price for advertising *ten* dollars the first week, and *seven* dollars for each subsequent insertion. The paper was issued weekly.

It is important to all invalids to know that castor oil may be easily taken mingled with orange juice—a little sugar being added to the juice, if the orange be not ripe and sweet. The difference between this and other modes of taking this valuable medicine is surprising.

Howard's Improved Easy Draught Plows.

Great improvements have been made the past year in the form and workmanship of these Ploughs; the mould board has been so formed as to *lay the furrow completely over, turning in every particle of grass or stubble, and leaving the ground in the best possible manner.* The length of the mould board has been very much increased, so that the Plough works with the greatest ease, both with respect to the holding and the team. The Committee at the late trial of Ploughs at Worcester, say,

"Should our opinion be asked as to which of the Ploughs we should prefer for use on a farm, we might perhaps say to the inquirer, if your land is mostly light and easy to work, try Prouty & Mears, but if your *land is heavy, hard orrocky.* BEGIN WITH MR. HOWARD'S."

At the above mentioned trial the Howard Plough *did more work, with the same power of team, than any other plough exhibited.* No other turned more than twenty seven and one half inches, to the 112 lbs. draught, while the *Howard Plough turned twentynine and one half inches, to the same power of team!* All acknowledge that Howard's Ploughs are much the strongest and most substantially made.

There has been quite an improvement made on the shoe, or land side of this Plough, which can be renewed without having to furnish a new landside: this shoe likewise secures the mould board and landside together, and strengthens the Plough very much.

The price of the Ploughs is from $6 to $15. A Plough sufficient for breaking up with four cattle, will cost about $10 50, and with cutter $1, with wheel and cutter, $2 50 extra.

The above Ploughs are for sale, wholesale and retail, a at the New England Agricultural Warehouse and Seed Store Nos. 51 & 52 North Market Street, by

JOSEPH BRECK & CO.

SUPERB VARIETIES OF FLOWER SEEDS.

JOSEPH BRECK & CO. *Seedsmen and Florists*, No. 51 and 52 North Market street, (up stairs) have now received a full supply of fresh *FLOWER SEEDS* from the most celebrated Florists of Europe, from their own garden in Brighton and from other sources, of the most select varieties—ever offered in this country. Special attention has been given by the subscribers in long practice, in improving the numerous varieties of hardy Flowers, which have so long been the object of their cultivation and they feel assured that the seeds saved by themselves, cannot be surpassed by any other growers in the country.

Among some of the choice seeds are the following, viz:

Extra fine Verbena seeds, raised by an amateur in this country, from a bed of seedling, of 40 different varieties of every color and shade, price per package,	25
Extra fine Double Picotee and Carnation Pink seed, saved from a bed of 50 fine double varieties, (Breck & Co's. best.)	25
Extra Double Carnation seed from fine named Florists Flowers (imported,)	25
Extra double Picotee Pink seed from fine named double Flowers (imported)	25
Fine Carnation and Picotee Pink seed,	12½
Extra Double Florists Pink seed, from choice named Flowers (imported)	25
Double Chinese Imperial Pink seed, raised in this country from a bed of 50 or more fine varieties,	12½
Phlox Drummondii, mixed colors, embracing scarlet, crimson, purple, rose, pink, and variegated varieties,	12½
Calceolarias, mixed varieties, from fine named sorts,	25
Pansy seed, from a collection of named sorts,	25
Geraniums, from a great variety of fine named sorts,	25
Petunia seed, from a great variety of fine mixed, variegated and other sorts,	12½
Double Hollyhock seed, in boxes containing sixteen distinct varieties,	75
German Asters, of the most improved and splendid sorts, in boxes of 12 beautiful varieties,	75
Annual and perennial Lupins, in boxes, containing 16 distinct species and varieties, many of them most superb,	75
Goodetias and Œnotheras in boxes, 10 best varieties and species,	50
Russian and other ten week stock, 20 distinct varieties,	1,00
Ditto 10 ditto ditto	50
A collection of 20 best varieties of Annual Flower seeds,	1,00
Ditto 40 varieties of Annual and Perennial Flower seeds,	2,00
Boxes containing a choice collection of 100 varieties of Annual and Perennial Flower seeds,	4,00
Polyanthus seed from fine named sorts, per package,	25
Auricula ditto	25
Didiscus cœrulea,	12½
Brachycome Iberidifolia,	25
Mimulus—8 varieties,	75
Do. single paper,	12½
Double Balsams, 10 superb varieties,	62½
Four varieties fine Candytuft,	25
Six " sweet Peas,	37
Four " wall Flower,	25
Four " Schizanthus,	25

Also, other fine varieties, too numerous to mention, embracing a rare collection of more than 400 varieties. Catalogues may be had on application.

JOSEPH BRECK & CO.

FRUIT AND ORNAMENTAL TREES.

JOSEPH BRECK & CO. have for sale a large assortment of choice *FRUIT AND ORNAMENTAL TREES*, which they offer to the public at reasonable rates. As they are Agents for many of the best Nurseries and Gardens in the vicinity of the city, they can execute any order that they may be favored with. From their own Nurseries they can furnish the best varieties of Apple, Pear, Cherry, Plum Peach, Apricot, Nectarine, Quince, Grape, Gooseberry, Currants, &c. Also, Ornamental Plants, of every description.

Boston, March 11, 1846.

TRACE CHAINS, &c.

Just received per ship "Sunbeam," from Liverpool, a large assortment of Fence, Trace, Halter and Dog CHAINS, of every description.

Also, per "Mary Ann," from Liverpool, a large assortment, of splendid *GARDEN SHEARS, FLOWER GATHERERS, BRIAR HOOKS, NORWAY RAG STONES*, &c. and

For sale at the New England Agricultural Warehouse and Seed Store, by JOSEPH BRECK & CO,

March 18. No. 51 and 52 N. Market street.

GUANO.

The cargo of the ship TALMA, from Madagas Island, will be sold in any quantity desired, put up in bags or barrels, or in bulk, if preferred. The analysis of this cargo by J. E. TESCHEMACHER, Esq., can be seen by applying to

March 18. 8w MAGOUN & SON, 66 State street.

HOWARD'S PREMIUM SUBSOIL PLOWS.

The sub-oil Plow is unquestionably the most important agricultural implement of modern invention. It is considered by the best informed practical farmers of Great Britain and our own country, as an indispensable article in the most profitable husbandry.

These Plows are for sale, wholesale and retail, by

JOSEPH BRECK & CO.

N. E. Agricultural Warehouse and Seed Store, 51 & 52, North Market Street, Boston.

MARTIN'S MASSACHUSETTS PREMIUM EAGLE PLOWS.

The subscribers have for sale at their extensive Agricultural Warehouse, No. 51 & 52 N. Market street, *MARTIN'S MASSACHUSETTS PREMIUM IMPROVED EAGLE PLOWS.*

Mr. Martin's Plows combine new and important improvements adapting them to the different qualities of soil and the various modes and systems of culture His Eagle Plows, as improved, are much longer, the mouldboard, landside and point, or share, all extended without any addition to the width or heel in its work; thus adapting this Plow to the more perfect turning under of the greensward, and inverting of the furrow-slice, so desirable in greensward plowing. The principle of these Plows is such, from where the furrow-slice is received upon the mouldboard to where it leaves it, that it enables the Plow to take up the furrow-slice with the greatest possible ease, bearing equally and lightly over the whole surface of the mouldboard, turning it over with the least possible bending or twisting, and preserving it flat, smooth and unbroken, laying the furrow-slices closely and compactly side by side, and creating but slight friction upon the face of the mouldboard in passing through the soil. Thus the Plow requires but very little power of draft beyond what is necessary to cut out the furrow-slice.

His castings are of a superior kind, the workmanship not inferior to any other Plows in this country, and his timber being the very best of white oak; and every farmer knows that good timber in his Plows is of the utmost importance—all of which in fact renders B. Martin's Plow the very article every farmer wants. The high character of these Plows is abundantly sustained by a continued and extended patronage, which the manufacturer hopes by his efforts and exertions to retain. Being himself an experienced Plow-Maker, he will not spare any exertions in order to render his Plows a superior article.

Gentlemen are requested to call and examine these Plows before they purchase. JOSEPH BRECK & CO.

Boston, March 24.

ESSAY ON GUANO.

For sale at Nos. 51 and 52 North Market Street, Teschemacher's Essay on Guano,—describing its properties and the best methods of its application in Agriculture and Horticulture, with the value of importations from different localities; founded on actual analyses, and on personal experiments upon numerous kinds of trees, vegetables, flowers, &c. Price 25 cents. J. BRECK & CO.

GRINDSTONES ON FRICTION ROLLERS.

Grindstones of different sizes hung on friction rollers and moved with a foot treader, are found to be a great improvement on the old mode of hanging grindstones. Stones hung in this manner are becoming daily more in use and wherever used, give universal satisfaction. The rollers can be attached to stones hung in the common way. For sale by J. BRECK & Co. No. 51 North Market street.

BOUSSINGAULT'S RURAL ECONOMY.

Boussingault's Rural Economy; Price $1.75. Downing's Book of Fruits; price $1,75. Stable Keeper's Companion; price $1,00. Also, a general assortment of *AGRICULTURAL WORKS.*

JOS. BRECK & CO.

NEW ENGLAND FARMER,

A WEEKLY PAPER.

Terms, $2 per year *in advance*, or $2 50 if not paid within sixty days.

Remittances, *not exceeding ten dollars*, at any *one time*, may be made as follows:—A subscriber owes us two or eight dollars, which he wishes to remit us. He will pay this amount to the Post Master *in his own town*, and take his *receipt* for it, as money paid him on *our* account. He will then send that *receipt*, enclosed in a letter *to us*. We pass it to the Post Master in Boston, and get the money for it. This arrangement does away with nearly the whole risk of making remittance, and puts every subscriber in possession of "suitable funds" for that purpose.

TUTTLE AND DENNETT, PRINTERS
21 SCHOOL STREET.